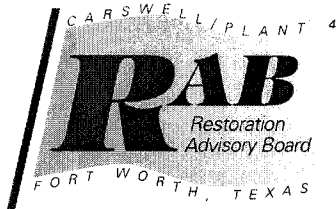




CARSWELL AFB TEXAS

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 764



**Carswell/Plant 4
Restoration Advisory Board Meeting
May 8, 2003
6:00–8:00 pm**

Agenda

Welcome/Introductions/Minutes	5 minutes
Westworth Redevelopment Authority Update	10 minutes
Action Items	
Air Force Plant 4/George Walters Project Update	15 minutes
Carswell Off-Base/Charles Pringle Program Update	15 minutes
<ul style="list-style-type: none"> – Sanitary Sewer System Field Work Update – Permeable Reactive Barrier Near Golf Course – Amend Plant 4 ROD/Accomplish OPS for Golf Course – Convert WSA's EOD to Residential Safety Clearance – Land Use Controls/Institutional Controls 	
Projected Future Land Transfers	
<ul style="list-style-type: none"> – Off-Site Weapons Storage Area FOST Update – Golf Course Parcels/Total Update 	
Carswell On-Base/Mike Dodyk Project Update	15 minutes
School Outreach Activities	5 minutes
RAB Business	5 minutes
<ul style="list-style-type: none"> – Cochair nomination & election at August RAB meeting 	
Next Meeting Agenda	5 minutes
Open Discussion/Questions	5 minutes

CARSWELL/PLANT 4 RESTORATION ADVISORY BOARD MEETING

DRAFT Summary Minutes of May 8, 2003 Regular Quarterly Meeting

A regular meeting of the Carswell/Plant 4 Restoration Advisory Board (RAB) was held May 8, 2002 at the Lockheed Martin Recreation Association Ranch House, 3400 Bryant Irvin Road. The RAB meeting began at 6:00 p.m.

AGENDA

Welcome/Introductions/Minutes

Westworth Redevelopment Authority Update

Action Items

Air Force Plant 4 (George Walters)
Project Update

Carswell Off-Base (Charles Pringle)

Program Update

- Sanitary Sewer System Field Work Update
- Permeable Reactive Barrier Near Golf Course
- Amend Plant 4 ROD/Accomplish OPS for Golf Course
- Convert WSA's EOD to Residential Safety Clearance
- Land Use Controls/Institutional Controls

Projected Future Land Transfers

- Off-Site Weapons Storage Area FOST Update
- Golf Course Parcels/Total Update

Carswell On-Base (Mike Dodyk)
Project Update

School Outreach Activities

RAB Business

- Cochair nomination and election

Open Discussion/Questions

WELCOME AND INTRODUCTION OF ATTENDEES

Allison Thompson called the meeting to order and asked if everyone was in favor of approving the minutes from the previous RAB Meeting. Everyone agreed to approve the minutes.

WESTWORTH REDEVELOPMENT AUTHORITY

Ms. Thompson introduced Leland Clemons to discuss the Westworth Redevelopment Authority activities. Mr. Clemons gave an update on the house leasing program. To date 100% of the units are leased. Plans have been received and are being reviewed for architectural compliance. Construction should commence in about three weeks. Eleven lots have been sold, with twelve more set to close in the next 30 days.

Mr. Clemons was pleased to announce that the golf course set a new record for public course play and revenues for the month of April. The response from the community has been very favorable.

Mr. Clemons discussed the purchase of approximately 82 acres of commercial property located in the former Lowe's area that should close in 60 to 90 days. The property will feature retail, office, and multi-family residential space. Currently there are 107 lots with 34 lots under contract. Mr. Clemons believes that builders who have interest in the development will commit to purchasing lots once the final approval is given. The general price range of the lots averages from \$76,000 to \$170,000. Currently the Westworth Redevelopment Authority is working with the Air Force on evaluating where the TCE plume boundary is relative to the future property boundary.

AIR FORCE PLANT 4

Mr. George Walters from the Aeronautical Systems Center at Wright Patterson AFB in Dayton, OH, stated that he would review past site information for the new attendees and update everyone on the current projects.

Lake Worth Sampling

Mr. Walter's first update involved the Lake Worth sediment sampling. He indicated that the Phase I sediment sampling conducted a couple of years ago showed low concentrations of PCBs. Mr. Walters described the physical characteristics and prior uses of PCBs. He also briefly discussed fish consumption and the effects of sediment contamination on fish versus water contamination. Routine Lake Worth water samples indicate the lake water itself is clean.

Based on the levels measured in the Phase I sediment investigation, a Phase II investigation of the Lake Worth sediments was conducted. Mr. Walters indicated that the field work was just completed. The goal of the Phase II work was to find hotspots where

contamination levels are elevated. Mr. Walters detailed the types of samplers used for the collection of sediments, number of samples collected, and the workers assigned to perform the sampling tasks. He also noted that the analysis attempted to "fingerprint" the different mixtures of PCBs, which could be useful in identifying different sources. Mr. Walters presented numerous maps detailing various watersheds and sampling locations. A general overview of PCBs within sediments, based upon historic usage, was presented as well as current studies of PCB distribution in the global environment.

Building 181, Electrical Resistance Heating

Mr. Walters indicated that this project was completed and that a report was pending from the contractor. He indicated that tanks associated with Building 181, located near the southwest side of the plant, historically leaked TCE. Mr. Walters described the physical characteristics of TCE and its behavior within the subsurface. He also described the initial Soil Vapor Extraction with catalytic oxidation treatment system installed inside Building 181 to treat the TCE contamination. Mr. Walters further indicated that this treatment system was recently enhanced by the application of electrical resistance heating. According to Mr. Walters, this system is the largest indoor application of its type to date. The electrical resistance heating process was described with the aid of several diagrams depicting a cross section of the area showing the contamination and the stratigraphy. Two other diagrams showed the electrodes in the ground with respect to the dense non-aqueous phase liquid (DNAPL) and the water table, as well as the above ground features of the system. Mr. Walters detailed the volume of TCE removed (1,400 pounds), the current status of the system (turned off on December 18th), and the justification for the application of electrical resistance heating. Only one groundwater monitoring well was identified as having a TCE concentration over the remediation goal identified in the Air Force Plant 4 Record of Decision (10,000 micrograms per liter). This monitoring well will continue to be monitored over the next several months.

North Plume

Mr. Walters indicated that an additional subsurface investigation was conducted at the North Plume in December and January. This investigation was conducted to determine whether any source areas were present in this area. A potential source area was hypothesized to exist based upon an evaluation of groundwater flow and TCE radioisotope fingerprinting (fingerprinting is a kind of sampling to determine different "types" of TCE). The contamination on the northern side of NAS Fort Worth JRB was hypothesized to have been from a different source area than the southern side and the Building 181 spills. However, no source areas were identified in this area. The type of drilling rig used for collecting the samples was described based upon its effectiveness in accessing areas, its cost advantages, and type of sampling devices employed. The on-site mobile laboratory used was compared with the traditional laboratories normally utilized for analyzing samples.

Mr. Walters further indicated that all the reports are located on CDs within the White Settlement library. He also indicated that all the data collected will be incorporated into a

future model to evaluate the TCE plume. The modeling results will aid in the how the treatment systems are run. Mr. Walters further detailed a website and budgets for future work.

CARSWELL OFF-BASE

Mr. Pringle introduced himself as being from the Air Force Center for Environmental Excellence (AFCEE) representing the Air Force Real Property Agency (AFRPA), formerly known as the Air Force Base Conversion Agency. His primary mission is to execute the closures of the off-base sites including the golf course, the stables area, the Wherry Housing area, and the Weapons Storage Area so that the land can be transferred. Mr. Pringle is responsible for 19 sites, 18 of which are closed.

Sanitary Sewer System Field Work Update

Mr. Pringle has managed investigations conducted on the sanitary sewer line and found 12 locations along the line that are considered to be contaminated above regulatory action levels. He is currently waiting for funding to perform the removal of these contaminated soils.

Permeable Reactive Barrier (PRB)

Mr. Pringle discussed how the PRB project was initiated and the pooling of AFCEE, AFRPA, and ASC resources to fund the project. The PRB was designed and installed by HydroGeoLogic, Inc., and is currently the longest continuously trenched PRB in the world. The PRB is working very well but, because it was initiated as a technology demonstration project (and not a final remedial alternative), there is about 500 feet on either sides of the PRB that does not completely straddle the entire plume going into the golf course. Mr. Pringle has submitted another project to the AFRPA for funding to expand the PRB. Once the expansion has been completed along with the natural attenuation occurring downgradient (east) of the PRB, the golf course land should be able to be transferred to Leland Clemons (Westworth Redevelopment Agency). Currently a Focused Feasibility Study is being conducted to determine the final remedial alternatives before transferring land.

Weapons Storage Area

Mr. Pringle indicated that a Safety Clearance had been received to transfer the land as an agricultural area. Mr. Pringle discussed the steps that will need to be taken to change the Safety Clearance to a residential area. Currently, because of safety concerns, digging can only advance 12 inches below ground surface, and if someone wants to turn the area into residential they would need clearance for a minimum of 10 feet. The area will need to be resurveyed. The request for approval has been submitted to the AFRPA. Due to the limitations of environmental funding at this time, Mr. Pringle does not expect to be able to proceed on this task for at least a year.

Land Use Controls/Institutional Controls

Restriction notices will need to be added to any deeds in the transfer of land regarding potential concentrations in drinking water or potential vapors entering buildings.

CARSWELL ON-BASE

Mr. Dodyk, the resident engineer at the former Carswell AFB, was introduced. He works for AFCEE at on-site at the NAS Fort Worth JRB. To date, the Air Force has received closure on 78 of the 87 sites.

Sediment sampling for Solid Waste Management Units (SWMUs) 54 and 55 was performed in February. Removal of free product from one monitoring well inside SWMU 19, a former fire training area, was conducted in March.

Sampling of the PRB is performed quarterly. Samples are collected upstream of the PRB, from within the PRB, and downstream of the PRB to see how effective it is in lowering the levels of TCE and its daughter compounds. The latest round was completed in March.

Area of Concern 1

Construction on the former base gas station groundwater pump and treat system began in February. Mr. Dodyk commented that there have been a few delays, but that it should be fully operational in June. The pump and treat system will extract contaminated groundwater and pipe it through an air stripper. The air stripper works by forcing air up through the contaminated water as it cascades down the air stripper packing. This process effectively volatilizes the hydrocarbons from the water. The treated water is then discharged into the sanitary sewer. The air stripper should be in place and running by June.

Northern Lobe of the TCE Plume

This summer, vegetable oil will be injected into the northern lobe of the TCE plume at the NAS Fort Worth JRB to demonstrate the effectiveness of vegetable oil injection to remediate chlorinated solvents such as TCE. The addition of a carbon substrate can stimulate indigenous microbial growth and development. Biodegradation of the substrate produces metabolic acids and lowers the oxidation-reduction potential of the aquifer, thereby stimulating anaerobic conditions which are conducive to reductive dechlorination.

The work plans for this demonstration study have been reviewed and submitted to the regulators, and AFCEE is awaiting comments.

Landfills 2, 6, 7, and 9

The draft Public Notice is being reviewed for future newspaper publication.

RAB BUSINESS

Gregg McGraw asked the RAB Committee if they were satisfied with Allison Thompson as the RAB co-chair. The RAB indicated they were satisfied with Allison Thompson and she was re-elected to serve as the RAB co-chair until she steps down or is removed by the RAB.

NEXT MEETING

Although it was announced at the meeting that the next RAB meeting will be August 14, 2003, this date has since been changed to August 21 due to conflicting meetings.

IN ATTENDANCE***Carswell DERA (On-Base)***

Joe Ebert, HQ AFCEE/ERD
 Mike Dodyk, AFCEE, Resident Engineer
 Miquette Rochford, HydroGeoLogic, Inc.
 Lynn Morgan, HydroGeoLogic, Inc.
 Jeff Blunt, Booz Allen and Hamilton
 Andrea Linder, Booz Allen and Hamilton
 Mike Hawkins, AFCEE

Carswell AFBCA (Off-Base)

Charles C. Pringle, HQAFCEE/ERD

Air Force Plant 4

George Walters, AFP 4 Project Manager, ASC, Wright Patterson Air Force Base
 Gregg McGraw, Shaw Group
 Randall McDaniel, Shaw Group
 Rick Wice, Shaw Group

United States Navy

Mike Hayes

Texas Commission on Environmental Quality

Tim Sewell

U.S. Environmental Protection Agency

Bob Sullivan
 Noel Bennett

Lockheed Martin

Norman Robbins
Elizabeth Rowls

Others (Off-Base)

J'Nell Pate, Community Member
Leland Clemons, Westworth Redevelopment Authority
Ed VonKohn, Westworth Village
Jim Scanlan, City of Fort Worth Water Department
Richard Talley, City of Fort Worth Water Department
Chris Breitling, City of Fort Worth Environmental Management Department
Clarence Reed, City of Fort Worth Environmental Management Department
Ms. Chris Baack, Community Member
D.W. Owens, River Oaks
Greg Hendrickson, River Oaks
Allison Thompson, City of White Settlement
Mike Gross, Community Member
Tom Sale, Colorado State University
Barbara Knickerson, Freese Nicholls Engineers
William Myers, Community Member

Comments regarding the meeting minutes should be sent to:

Ms. Miquette Rochford
HydroGeoLogic, Inc.
Phone: (703) 736-4511
Fax: (703) 471-4180
e-mail: mer@hgl.com

Headquarters U.S. Air Force

Integrity - Service - Excellence

Carswell Off-Base BRAC UPDATE Restoration Advisory Board



**Charles C. Pringle, BEC
8 MAY 2003**

U.S. AIR FORCE



U.S. AIR FORCE

Carswell Off-Base/Agenda

■ Program Update

- Sanitary Sewer System Field Work Update**
- Permeable Reactive Barrier near Golf Course**
- Amend Plant 4 ROD/Accomplish OPS for Golf Course**
- Convert WSA's EOD to Residential Safety Clearance**
- Land Use Controls/Institutional Controls**

■ Projected Future Land Transfers

- Off-Site Weapons Storage Area FOST Update**
- Golf Course Parcels/Total Update**



Air Force Center for Environmental Excellence
Promoting Readiness through Environmental Stewardship

NAS Fort Worth JRB Installation Restoration Program Update

Michael R. Dodyk, P.E.
AFCEE
May 8, 2003



Site Closure Update

To date, the Air Force has received closure on 78 of the 87 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) basewide.

No additional sites have been submitted for or have been approved for closure since the February RAB meeting.

Promoting Readiness through Environmental Stewardship

2



Field Activities

Construction of the groundwater remediation system at the former base gas station (AOC 1) began in February and is ongoing.

Confirmation sediment sampling at the storm water interceptors and east gate oil/water separator (SWMUs 54 and 55) was conducted in February.

Continued removal of petroleum hydrocarbons from one monitoring well at SWMU 19, a former fire training area occurred in March.

Performance monitoring of PRB was conducted in March.

Promoting Readiness through Environmental Stewardship

3




AOC 1 Pad Construction




Promoting Readiness through Environmental Stewardship

4




AOC 1 Piping Trench



Promoting Readiness through Environmental Stewardship

5



Upcoming Field Work

June 2003:

Performance monitoring of the PRB (groundwater sampling.)

Start up of the AOC 1 groundwater treatment system.

Promoting Readiness through Environmental Stewardship

6



Upcoming Field Work (cont)

Summer/Fall 2003:

Delineation of various compounds and an excavation to remove cadmium-impacted surface soil at Landfill 1.

Delineation of sediment/soil contamination at SWMUs 54 and 55.

Vegetable Oil Injection (demonstration study) in the Northern Lobe of TCE Plume.

Promoting Readiness through Environmental Stewardship

7



Documents Under Review

Draft Documents Under Review by AFCEE:

RFI of SWMUs 19, 20, and 21 (Former Fire Training Area No. 2).

Draft Public Notice for Landfills 2, 6, 7, and 9.

Vegetable Oil Work Plans.

Documents Under Review by Regulators:

Draft Final Focused Feasibility Study on the Southern Lobe TCE Plume.

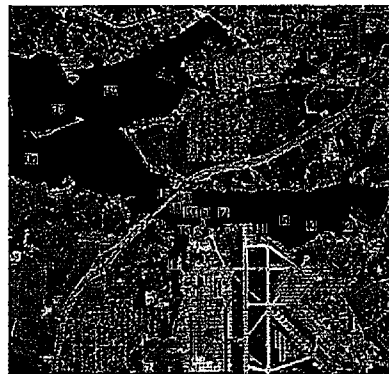
Promoting Readiness through Environmental Stewardship

8



USGS Sediment Sampling at Lake Worth Phase I

- Surficial sediment samples were collected from 21 sites distributed throughout the lake.
- Gravity cores were collected at 3 of the 21 sites (red numbers) and had numerous samples analyzed down core to reconstruct contaminant histories.



Lake Worth Sediments Phase 1 Results

Total PCB concentrations (ug/kg) in the surficial sediments of Lake Worth indicate one area of elevated concentrations, Woods Inlet, where runoff from AFP4 and urban area enter the lake.



USGS Sediment Studies at Lake Worth Phase 2

Objectives

- Map the extent of sediments containing elevated levels of PCBs (approximately greater than 20 ug/kg) in Woods Inlet on Lake Worth near Air Force Plant 4, and,
- Determine likely sources of PCBs to sediments entering Woods Inlet from Meandering Road Creek, Air Force Plant 4, and other small tributaries.

Approach

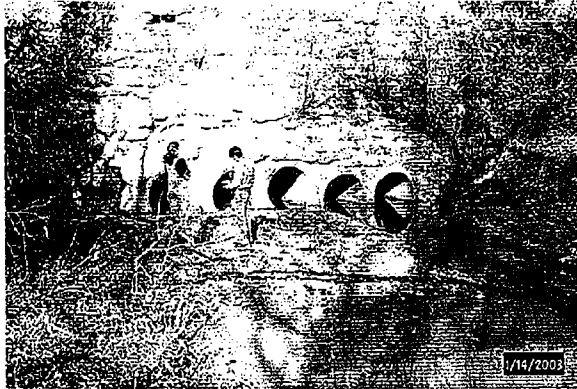
- Use surficial sediment sampling and sediment cores to map PCB and heavy metal concentrations in more detail spatially and temporally in Woods Inlet.
- Install passive samplers on inflowing creeks and sample PCBs and heavy metals in storm water from potential source areas.
- Measure PCBs using a congener-specific chemical analysis in an attempt to 'fingerprint' different mixtures of PCBs from different sources.



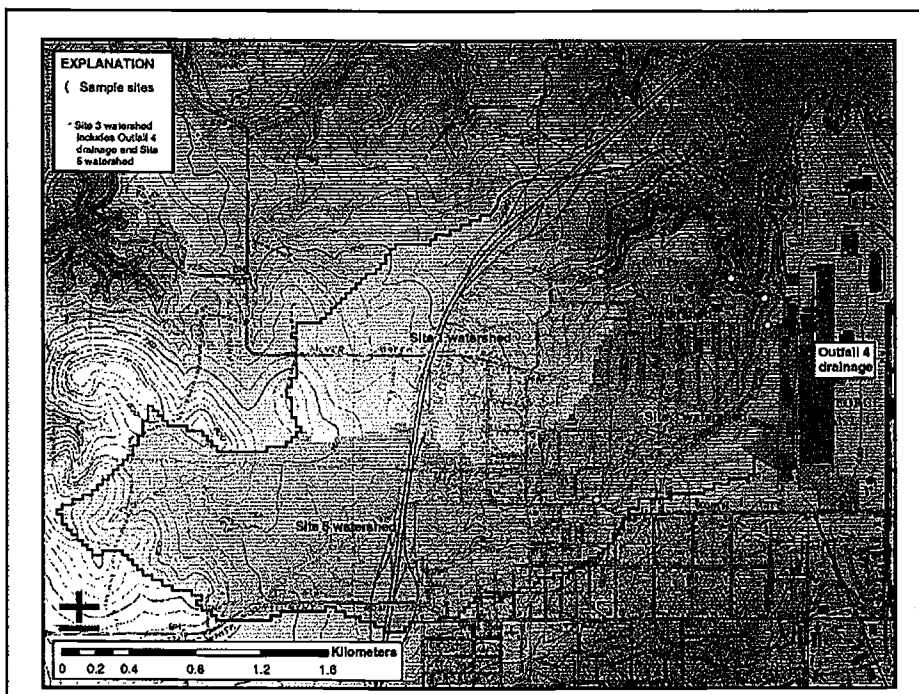
USGS Sediment Studies -- Phase 2

Site Reconnaissance January 14, 2003

- Five sites selected to monitor stormwater for PCBs.
- The sites include AFP4, Tx Guard, and urban areas.
- Most of watershed to Woods Inlet covered, including all likely sources.



Mouth of Meandering Road Creek at Lake Worth, upper end of Woods Inlet. Site #3

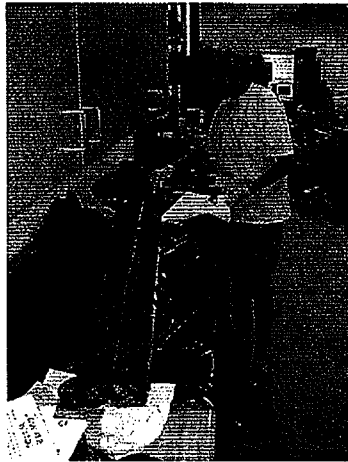


Phase 2 Sites -- Land Use

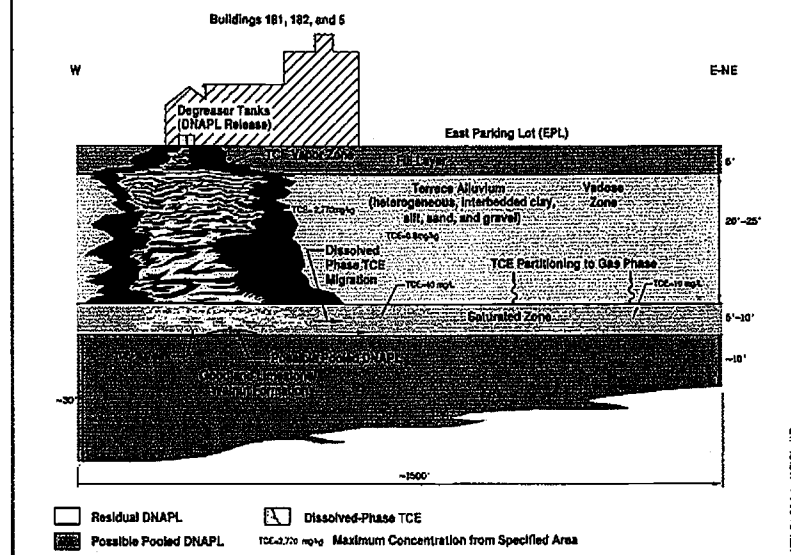
Site	Informal Name	Area (sq. km.)	% urban
1	west creek	2.04	55.1
2	Tx guard	0.36	70.8
3	Meandering Road Creek, lower	4.12	46.4
4	AFP4, outfall #4	0.17	95.9
5	Meandering Road Creek, upper	2.81	38.2
Woods Inlet	Drainage to PCB "hot spot"	7.49	49.0
Notes:			
1) Site 3 includes Outfall 4 & Site 5			
2) 2000 land-use / land-cover data provided by North Centre			
3) % industrial includes utilities			



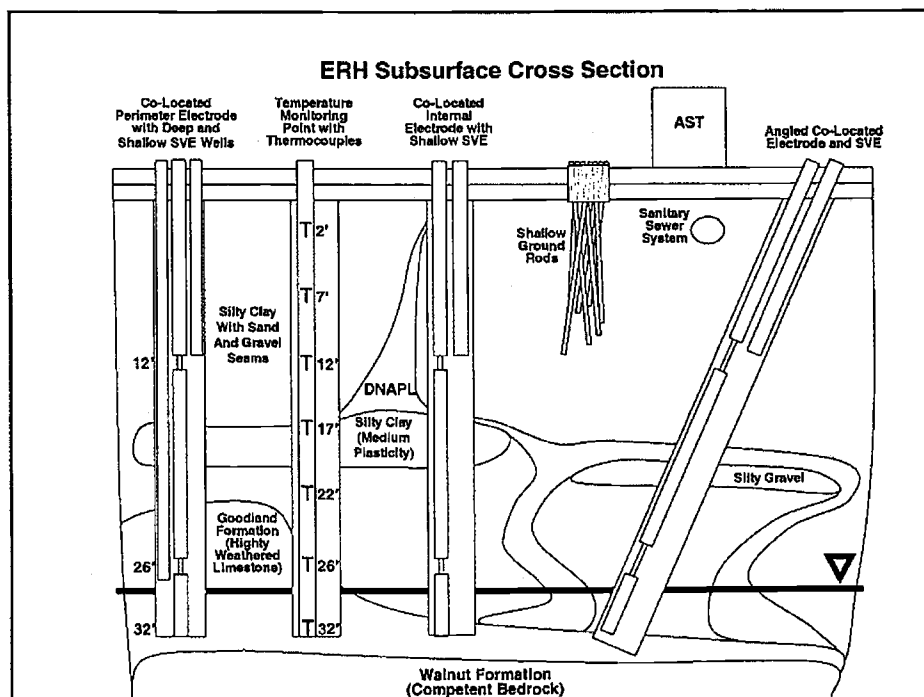
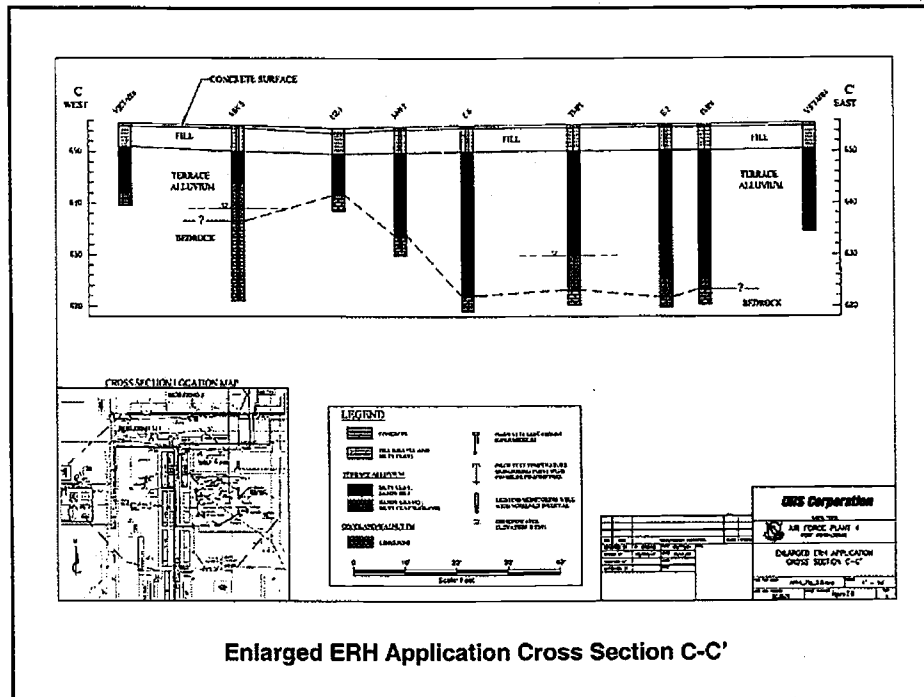
USGS at work

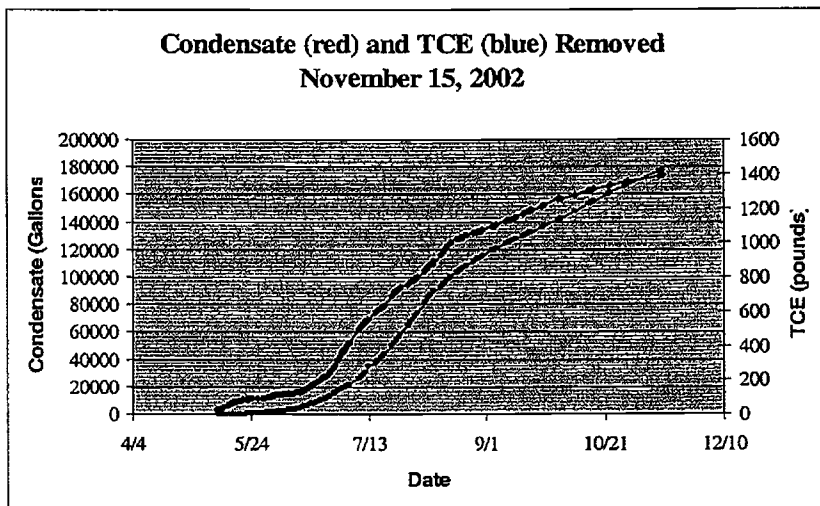
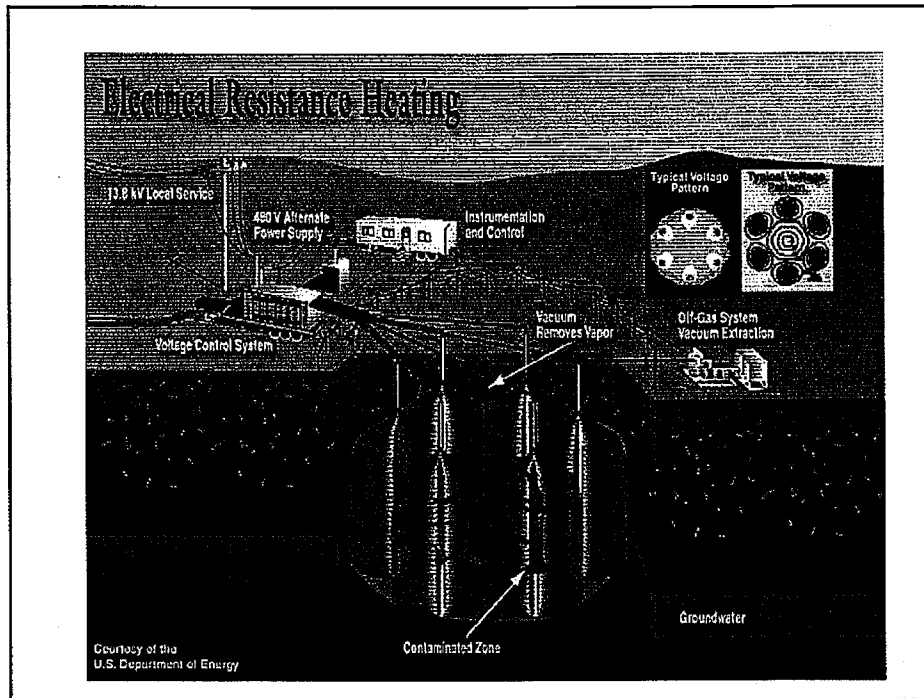


Electrical Resistance Heating - 3 Phase (was 6)



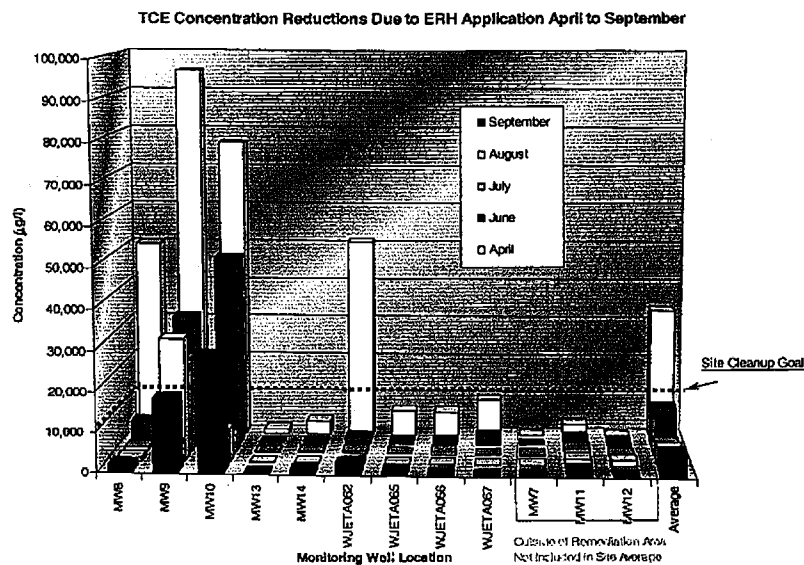
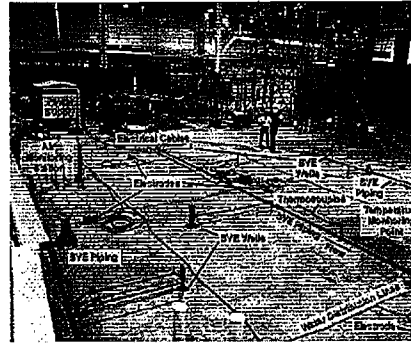
Building 181 and EPL Conceptual Site Model





Source Area Remediation Demonstration Electrical Resistive Heating AF Plant 4, Fort Worth, TX

- ERH demonstration started 7 May 02 – Ended 18 Dec 02
- Total power input into the subsurface - 1.899 MWh
- Total condensate removed from the subsurface – 177,711 gals
- Total TCE removed from the subsurface – 1391 lbs
- Total soil borings that achieved cleanup goals – 10 of 10
- Total monitoring wells that achieved cleanup goals - 8 of 9



USGS 2001 Conceptual Site Model

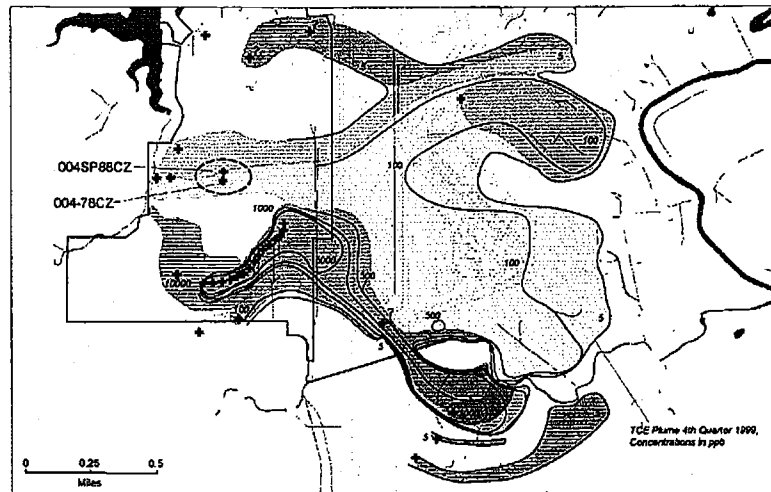
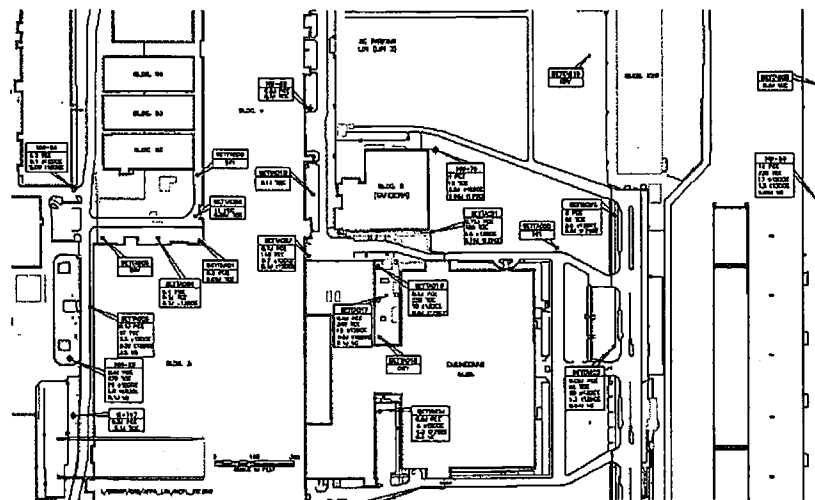


Figure 4. Possible TCE source areas, conceptualized in May 2001 by Sandy Eberts of the USGS

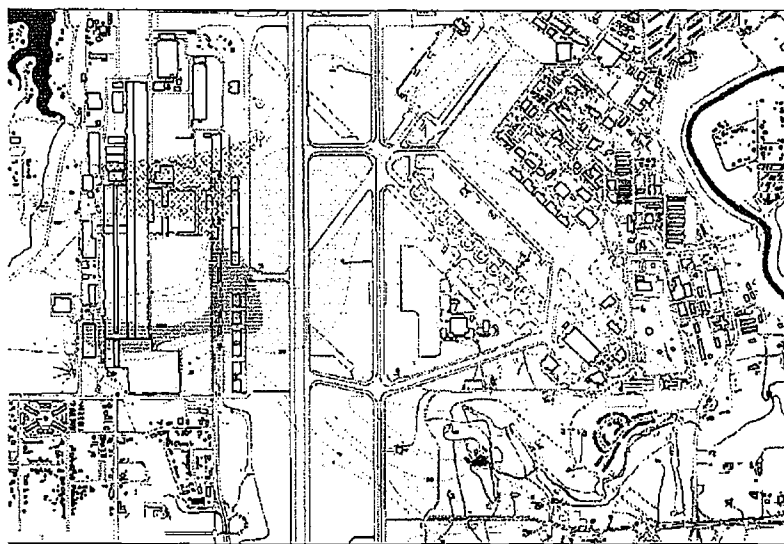
Groundwater Results

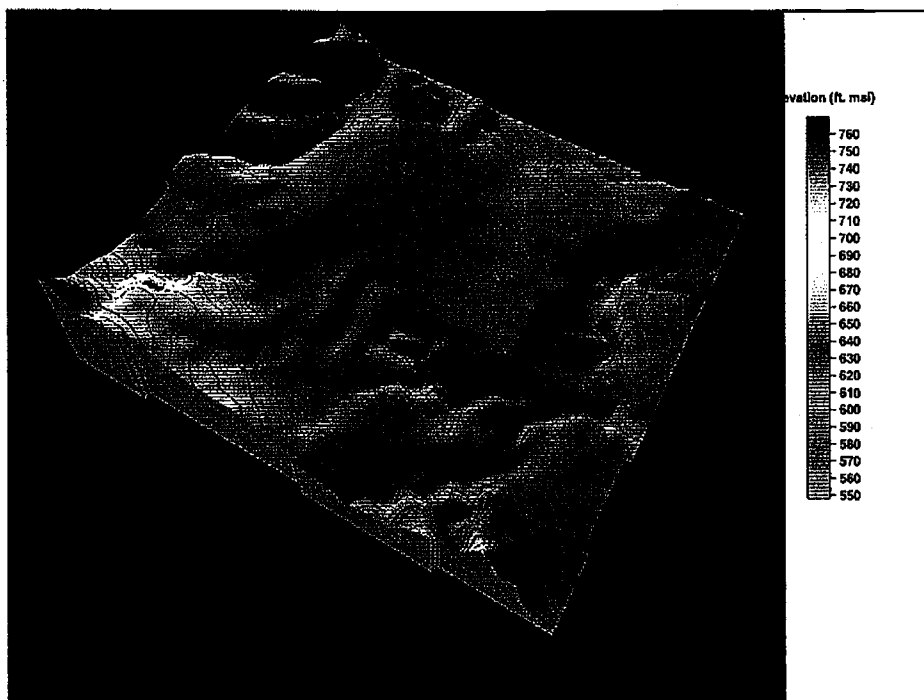


MIP Response (Looking North)



TCE Concentrations at AFP4 and NASFW



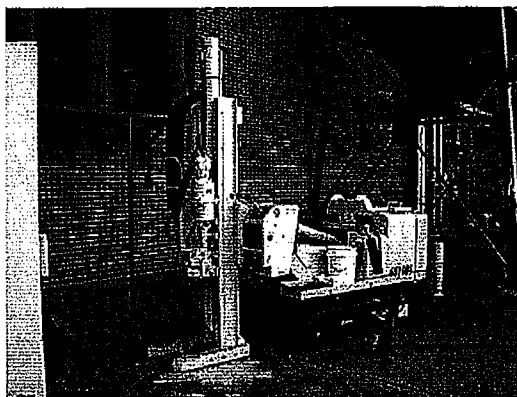
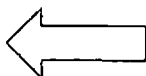


5 Year ROD Review Report (I can email to you, or at Library)

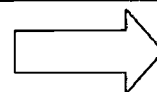
Long term monitoring in Oct/Nov 2002

Additional investigation on
north side of building.

Equipment removed from
Heating area, soil samples taken.



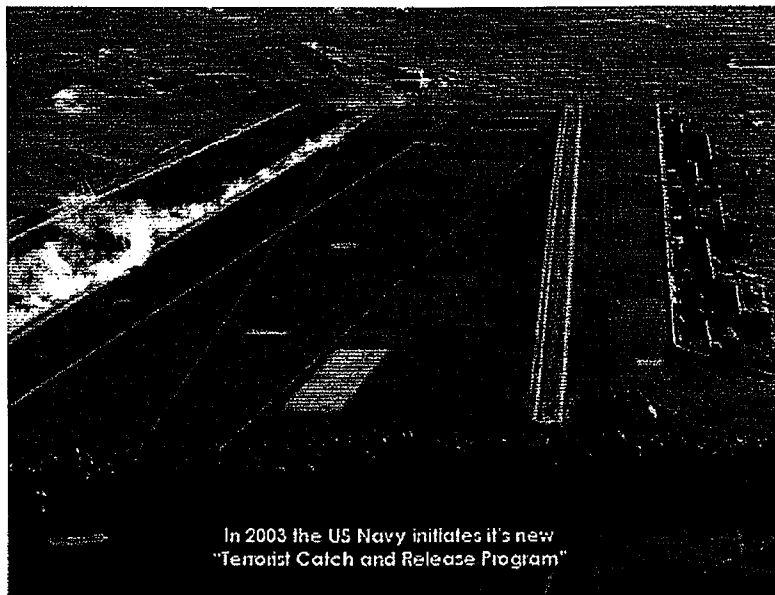
USGS working on sediment sampling, radioisotope report,
Conceptual modeling.



Budget is very tight the next few years! <https://www.denix.osd.mil/denix/denix.html>

Some work is better done in the Winter than Summer!!!

East Parking Lot Electrical Surge protection upgrade.



In 2003 the US Navy initiates it's new
"Terrorist Catch and Release Program"

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE